

Figure 5-5: Greenbelt Soils



Sources:
ESRI (2013), GSA (2013), NRCS (2013), NHD (2013)
Prince George's County (2013)

5.1.1.2 Soils

The majority of the site northwest of Indian Creek is paved asphalt, while the southeastern half of the site is forested. Fill material from the construction of Lake Artemesia has been placed at the site for development of the surface parking lot. The United States Department of Agriculture (USDA) Natural Resource Conservation Service (NRCS) has identified five major soil associations within the Greenbelt site, as shown in figure 5-5 and table 5-1. None of the soils identified at the site are considered highly erodible soils, nor are any of the soils considered to be prime farmland (Prince George's Soils Conservation District 2013). Soil associations and their characteristics are listed from east to west in table 5-1.

Udorthents Associations

There are two Udorthent associations located on the Greenbelt site. The Udorthent, highway association soils, are located mainly along the western and northeastern site boundary and comprise approximately 14 percent of the site, while Udorthent, loamy association soils, are located primarily throughout the center of the site and along the southwestern and northern boundaries and comprise approximately 57 percent of the site. It is important to note that the buildable area for this site alternative is located exclusively within these two Udorthent associations.

Table 5-1: Greenbelt Site Soil Characteristics

Soil Type	Acres within Site	Slopes (percent)	Water Erosion Factor (K factor)	Wind Erosion Factor	Building Potential	Drainage and Flooding Potential	Hydric
Udorthents, Highway complex	12	0 - 65	N/A	N/A	N/A	Well-drained and nearly zero flooding potential	No
Udorthents, Loamy complex	49	0 - 5	0.37	5	Not limited	Well-drained and nearly zero flooding potential	No
Zekiah and Issue soils complex	23	0 - 2	0.37	5	Very limited	Poorly drained and high frequency of flooding	No
Russet-Christiana-Urban land complex	2	0 - 5	0.49	3	Somewhat limited	Moderately well-drained and nearly zero flooding potential	Yes
Elkton-Urban complex	1	0 - 2	0.43	5	Very limited	Moderately well-drained and nearly zero flooding potential	Yes

The larger overall Udorthent association consists of cuts and fills or disturbed soils, typically of adjacent soil types. USDA-NRCS indicates that the Udorthent association has problems associated with stability and subsidence. Both Udorthent associations within the site are considered to be well drained; water is removed from the soil readily but not rapidly, and both associations are estimated to have a nearly 0 percent chance of flooding in any given year, with flooding occurring on these soils less than once in 500 years (USDA 1967, 2015).

The Udorthent, Highway association soils map unit is primarily composed of human transported material/urban land and has a wide range of slopes varying from 0 to 65 percent, with slopes within the site towards the lower bounds of this range. The Udorthent, loamy association soils, have a much more gradual slope, of 0 to 5 percent and are composed primarily of loamy deposits.

The potential of erosion for soil types is demonstrated using the erosion K factor, which indicates the susceptibility of a soil to erosion by water. K values range from 0.02 to 0.69. All other factors being equal, the higher the value, the more susceptible the soil is to erosion by water. Udorthent, highway association soils, do not have a K factor because they consist primarily of urban land. Udorthent, loamy association soils, have a K factor of 0.37. Susceptibility of soils to wind erosion is detailed using a wind erodibility group rating system, in which soils are assigned to a number ranging from 1 to 8, with soils assigned to group 1 having the greatest susceptibility to wind erosion and those in group 8 being the least susceptible. Udorthent, loamy association soils, have a rating of 5 and similar to water erosion Udorthent, highway association soils, have not been rated. Udorthent, loamy association soils, are generally not limited in construction potential (USDA 2015).

Zekiah and Issue Soils Complex

This soil complex is located within the eastern center and along the southern boundary, and comprises approximately 26 percent of the site. Zekiah and Issue soils consist primarily of loamy alluvium and are typically located along floodplains and drainage ways. Slopes generally range from 0 to 2 percent. This soil association is deep, poorly drained, and has a high frequency of flooding (i.e., a greater than 50 percent chance of flooding in any given year during normal weather conditions). These soils have very limited building potential as a result of their frequent flooding. The K factor of these soils is 0.37, with a wind erosion rating of 5.

The Russet-Christiana-Urban Land Complex

This soil complex is located in the southeastern portion of the site, and together with the Elkton-Urbana complex comprises the remaining 3 percent of the site.

The Russet-Christiana-Urban land complex is located in the southeast portion of the site and consists primarily of clay deposits with slopes ranging from 0 to 5 percent. This soil association is deep, moderately well drained, and has nearly a 0 percent chance of flooding, similar to the Udorthents. These soils have somewhat limited building potential as a result of their depth to the saturated zone. The K factor of these soils is 0.49 with a wind erosion rating of 3. These soils meet the criteria for hydric soils, which indicates past or present wetlands.

Elkton-Urban Complex

This soil complex is located in the southeastern portion of the site, and as noted previously, together with the Russet-Christiana-Urban land complex comprises 3 percent of the site.

The Elkton-Urban land complex consists primarily of silt loam with slopes ranging from 0 to 2 percent. This soil association is deep, poorly drained, and has nearly a 0 percent chance of flooding, similar to the Udorthents. These soils have very limited building potential as a result of their frequent ponding. The K factor of these soils is 0.43 and their wind erosion rating of 5. These soils meet the criteria for hydric soils, which indicates past or present wetlands.

The potential of erosion for soil types is demonstrated using the **erosion K factor**, which indicates the susceptibility of a soil to erosion by water. K values range from 0.02 to 0.69. All other factors being equal, the higher the value, the more susceptible the soil is to erosion by water.

LOAM

A fertile soil of clay and sand containing humus.